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Do mega-mergers create value? The acquisition experience and mega-deal outcomes

Nan Hu^a, Lu Li^{b*}, Hui Li^c, and Xing Wang^d

^a*Adam Smith Business School, University of Glasgow, University Avenue, Glasgow, G12 8QQ, UK*

Email: nan.hu@glasgow.ac.uk

^b*Bank of China Limited, London, EC2R 7DB, UK*

Email: lu.li@bankofchina.com (Correspondence Author)

^c*The Department of Finance, University of Birmingham, B15 2TY*

Email : h.li.14@bham.ac.uk

^d*Durham University Business School, Durham University, Durham, DH1 3LB, UK*

Email: xing.wang@durham.ac.uk

Abstract

Existing literature shows that mega-M&A deals valued over \$500mil end up destroying the shareholder value of acquirers on a significant scale. Our paper considers mega-deal as a dependent event and examines the role of acquirer's previous acquisition experience playing in the outcome of mega-deals. We find that mega-deals conducted by firms with a high level of acquisition experience, i.e. a firm completed at least 12 transactions before, are more likely to be completed. In addition, more experienced acquirer of mega-deals generate positive abnormal stock returns for shareholders in both short-run and long-run, with a dollar value gain of \$50.6 million around deal announcement. We also find that more experienced acquirers are better at managing the post-acquisition integration process and enjoy a significant improvement in operating performance.

Keywords: Mergers and Acquisitions, Mega-Deals, Acquisition Experience, and Value Creation

JEL Classification: G14, G34

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1. Introduction

It has been well documented that acquirers tend to destroy shareholders' wealth in mergers and acquisitions (M&As),¹ in large deals with transaction value especially, in excess of \$500 million (henceforth "mega-deals").² Several explanations have been provided in the literature, including the overpayment hypothesis (Loderer and Martin, 1990), the hubris hypothesis (Roll, 1986), the empire building hypothesis (Grinstein and Hribar, 2004), and the integration complexity hypothesis (Alexandridis et al., 2013). However, Alexandridis et al. (2017) document a recent change to this phenomenon and find that mega-mergers have generated more value for acquirer shareholders since 2009. There are a growing number of mega-deals. In 2015, mega-deals reached an all-time record for the U.S. market. There were 547 announced mega transactions with a total value of over \$2 trillion, which accounted for approximately 85% of overall U.S. M&As value and 10% of U.S. GDP that year, according to Thomson Reuters data.

With such large deal value, mega-deals play a significant role in firms' operation, generally receive widespread publicity and are under more investor scrutiny and corporate governance (Alexandridis et al., 2017). Specifically, mega-deals are usually undertaken as a strategic move by those largest and most successful firms who expect to accumulate more revenues beyond the established patterns (Davidson, 1987). For example, from the deals of IBM-Lotus, ExxonMobil-XTO, and more recently Facebook-WhatsApp, acquirers have used target firms as a springboard into a new market and to obtain the augmentation of business ranges. Besides the influence on the firm itself, following a mega acquisition the industry will be reshaped in terms of competition. Given the fact that mega-mergers continue at a rapid pace and play an important role, the limited evidence concerning their value creation calls for more investigations.

Another important consideration regarding mega-deals is the deal completion, but most studies only focus on the valuation effect of transaction. Unlike small deals, mega-deals tend to draw more antitrust scrutiny and are expected to cope with more regulation issues, which greatly challenge acquirers to choose the right target and the right time. Also, as a strategic move with significant influence, a mega-deal requires large amounts of resources and is prepared over a

¹ A survey by Betton et al. (2008) shows that bidders on average experience negative abnormal returns in most of the acquirer returns studies.

² For example, Moeller et al. (2004) document a negative relation between acquirer size and shareholder gains. Alexandridis et al. (2017) summarize considerable research suggesting that sizeable takeover ends up costing shareholders on a significant scale, including Cools et al. (2007), Henry and Jespersen (2002), Rehm et al. (2012), Saigol (2015), and Alexandridis et al. (2013).

long time and with great effort. If the transaction fails to complete, acquirers may be required to pay a huge amount of breakup fee to compensate the cost incurred by the target.³ In the AT&T-T-Mobile case, T-Mobile was paid \$3 billion in cash as well as \$1 billion in wireless assets after AT&T ditched the \$39 billion transaction. In addition to large failure costs, the previous literature also documents that acquirers of failed M&As underperform those whose deal was successful, and continue to suffer following the deal announcement (Masulis et al., 2012; Savor and Lu, 2009).

Previous research findings that large deals destroy value consider each mega-deal as an independent event. However, mega transactions are conducted with considerable difficulty by first time bidders due to a high degree of uncertainty and the complexities of integration. Consulting firms, e.g. Boston Consulting Group and Bain & Company, have suggested that instead of directly engaging in mega-deals, top acquirers first hone skill through smaller deals. With more experience, acquirers are capable of mitigating the risk of failure and creating synergies as they are more skilful at transforming the deal's complexity into value (Kengelbach and Roos, 2011). Based on this view, this paper investigates whether mega-deals conducted by an experienced acquirer will have a greater likelihood of completion and generate more wealth for acquirer shareholders.

Our study employs a data set of 3,544 U.S. mergers and acquisitions priced over \$500 million (2016 dollars), with the announcement date between 1980 and 2016. Following Zollo and Singh (2004), we measure acquisition experience with the total number of mergers and acquisitions that a sample acquirer completed before the mega-deal of interest.⁴ Our main findings show that mega-deals carried by a more experienced acquirer are more likely to be successful. The existence of a more experienced acquirer significantly increases the likelihood of mega-deal success by 3.57%. In addition, it is worth noting that mega-deals conducted by more experienced acquirers generate value for acquiring shareholders in the short-run, and this result only holds in the successful sample. Specifically, the median cumulative abnormal return for a more experienced acquirer is 0.14% in successful mega-deals during the three-day window around the deal announcement, corresponding to a value creation of \$19.39 million or 1.5 cents per dollar spent. In terms of inexperienced acquirers in the successful sample, the

³ According to the reports by Practical Law Corporate & Securities (2016), the average fee paid by acquirers is around 5% of the deal value.

⁴ As Hayward (2002) suggests that experience gained long while ago might be unavailable, we also measure acquirer experience by using the sum of mergers and acquisitions that a sample firm made during the 10 years before the announcement of mega-deal and the results still hold.

median cumulative abnormal announcement return is -0.25%, with a loss of \$4.71 million or 0.44 cents per dollar spent. Compared to successful mega-deals across the sample, although failed deals earn lower abnormal returns, the difference is not significant. This suggests that as of the deal announcement the successful and the failed deals cannot be clearly distinguished by the market.

Our long-run analysis suggests that mega-deals made by more experienced bidders have a better stock performance and a greater improvement in operating performance for a 3-year horizon following the deal announcement. This positive relation is only significant in the successful sample. Specifically, our results show that mega-deals completed by more experienced acquirers is subject to an excess 36-month stock return of 21.65% and *ROA* increase of 2.76% from -3 to +3 year relative to the deal announcement. The findings of the successful sample can be explained by considering that more experienced bidders excel at the integration process, e.g. cultural-alignment and goal-setting, and therefore helps mega-deals deliver a better performance, which is consistent with the view of consulting firms (Kengelbach and Roos, 2011).

By comparing the long-run stock performance of successful mega-deals with failed ones in the univariate analysis, an important finding is that failed acquirers continually underperform successful acquirers. However, this result only applies to inexperienced acquirer and there is no systematic difference between successful and failed deals made by more experienced acquirer. The buy and hold abnormal returns for inexperienced acquirers in the failed sample becomes gradually worse and drops from -10.72% in the 12-months window to -22.26% in the 36-months window following the deal announcement. This suggests that although mega-deals completed by inexperienced acquirers destroy value for shareholders, their failed counterparts do much worse.

Our paper contributes to the literature on the wealth effects of mega-deals. While the existing literature treat all mega deals as independent events and find on average mega deals destroy value for acquirers, we consider them as strategic and sequential decisions by the acquirers, and find that experienced acquirers can create, but not destroy, value for acquirer shareholders, in the form of higher completion rate and higher wealth effects of deal announcements.

Our paper also contributes to the organizational learning literature, and highlight the importance of past firm's M&A experiences on the M&A performance and imply that the cost of learning during the early-stage of the M&A experiences may be repaid back at later stage.

This new evidence has broad implications to policy makers, practitioners and other stakeholders of firm M&A.

The remainder of this paper is structured as follows. The next section presents the hypotheses development. Section 3 describes our sample. We start our formal analysis in Section 4, where the empirical results are reported and analysed. Section 5 conducts robustness checks. We conclude in Section 6.

2. Hypothesis development

Studies focused on the success of mega-deals mostly investigate the stock performance following a deal announcement. However, we argue that more attention to the completion of a mega-deal is also required. Compared to small deals, mega-deals with a larger transaction deal value which requires much more preparations during the pre-acquisition period and therefore could take more time and effort. The time to resolution is around 120 days for mega-deals, while it only takes about 70 days for non-mega-deals (Alexandridis et al., 2017). For example, Pfizer and Allergan merger, the largest pharmaceuticals deal in history, was advised by six investment banks and the time the two firms spent working on the deal is 135 days, and the withdrawn decision made all the efforts in vain. In addition, acquirers are on average subject to a termination fee which is around 5% of the transaction value (Practical Law Corporate & Securities, 2016). In the case of mega-deals, the break-up fee can be huge. Luo (2005) also suggests that a firm's reputation and credibility can be severely damaged by withdrawing from an announced deal. This damage would be great in the case of mega-deals as they generally receive more publicity i.e. media coverage.

To examine the completion of mega-deals, we follow organizational learning literature on M&As suggesting that acquirers can learn from previous acquisition experience (Barkema and Schijven, 2008; Lei et al., 1996; Levitt and March, 1988). With the complexity related to mega-deals, this paper argues that acquirers' experience plays a significant role in both the pre-acquisition negotiation and decision-making process. As Dikova et al. (2010) point out, more experience would help acquiring firms efficiently communicate with stockholders, employ the right integration strategy, implement an announcement plan, and meet the requirements set out by antitrust policy. Therefore, in the context of mega-deals, we would expect that:

H1: Mega-deals conducted by more experienced acquirers will have a higher likelihood to successfully complete.

In terms of deal performance, it is largely suggested by consulting firms that large deals made by experienced acquirers who have developed skills through small deals are more likely to realize synergies and achieve better performance (Kengelbach and Roos, 2011). However, the empirical evidence concerning the role that acquisition experience plays in M&As is mixed. On the one hand, the organizational learning hypothesis predicts that the ability to generate shareholder value increases with the number of merger deals done before (Hayward, 2002; Levitt and March, 1988). On the other hand, the advantage of learning will be cancelled if a more experienced acquirer becomes overconfident, leading to a worse deal performance (Billett and Qian, 2008).

We expect to find that acquirers' previous experience has a positive influence on mega-deals performance. Two reasons have been put forward, suggesting that acquirers in mega-mergers tend to be more cautious rather than overconfident. First, as a crucial strategic move involving a huge amount of money, mega-deals could have significant influence on firms' future operations and CEOs' future careers. Second, there would be more public attention given to mega-deals, and therefore acquirers face stricter investor and corporate governance. Therefore, we hypothesize that:

H2: Mega-deals conducted by more experienced acquirers will create more value for acquirer's shareholders.

3. Data and methodology

3.1 Sample selection Criteria

The sample of mergers and acquisitions includes completed and failed U.S. mergers and acquisitions between January 1980 and December 2016, from the Thomson Financial SDC database. We apply the following filters that are common in the literature: (1) the acquirer is a U.S. publicly traded company and the target is a public, private or subsidiary firm; (2) the transaction value is an inflation adjusted value of at least \$500 million in 2016 dollar terms and exceeds 1% of the acquiring firm's market value of equity 11 days before the announcement;⁵ (3) the acquirer owns less than 10% of the target's shares prior to the deal announcement and

⁵ The deal value decile cut-off at the 90th percentile of all U.S. transactions during our sample period is about \$500mil. Our results remain similar if we define mega-merger size of at least \$750 million or \$1 billion.

more than 50% after the deal; (4) the acquirer has stock price data and accounting data available on Centre for Research in Security Prices (CRSP) and Compustat, respectively; (5) the acquirer is not from the financial industry (SIC code 6000-6999) nor the utilities industry (SIC code 4900-4949) as these two industries have unique regulatory requirements. These restrictions result in a final sample of 3,544 M&A deals.

3.2 Measure of acquisition experience

Following Zollo and Singh (2004), acquisition experience is measured as the total number of acquisitions that a sample acquiring firm completed before the mega-deal of interest. The data is obtained from Thomson SDC, and therefore it is available back to the 1980s. Then we divide the mega-deals sample into three groups based on acquisition experience: mega-deals conducted by acquirers with high experience (the top 25%), with moderate experience (the middle 50%), and with low experience (the bottom 25%). We also construct a dummy variable *High Experience Dummy*, equalling one if a mega-deal is carried out by an acquirer with high experience, and zero otherwise. Within our sample, 857 of mega-deals with more experienced acquirers have completed more than 12 deals before, 1476 with moderate experience acquirers have completed 5 to 12 deals, and the rest are conducted by inexperienced acquirer who have completed less than 5 acquisitions earlier.

3.3 Descriptive and summary statistics

[Insert Table 1 Approximately Here]

Table 1 presents the number of mega-deals over time. We report the statistics for full sample and sub-samples divided according to acquisition experience. The fifth merger wave (1993 - 2000) saw an increase in mega-deals, but it ended with the dot-com bubble. Mega-deal activity recovered from the crisis in 2010 and has continued to increase until the last year in our sample. After splitting our sample based on the level of acquisition experience, the evidence shows an increasing proportion of firms with a high level of experience through time, showing a time trend in acquisition experience. To deal with the stationarity issue, our paper conducts all analyses and reports the results by using a detrended acquisition experience.⁶

[Insert Table 2 Approximately Here]

⁶ To detrend acquisition experience, we have pooled all the deals in our sample to regress experience on the corresponding year: $experience_t = \alpha + \beta t + \varepsilon_t$, where $t = 1980, \dots, 2016$. Then the residual is obtained as: $\hat{\varepsilon}_t = experience_t - (-32.85 + 0.022t)$.

Table 2 provides the summary deal and firms' statistics for mega-deals conducted by acquirers with different levels of experience. An extensive list of variables likely to influence acquisition outcome are employed, and the definition of each variable is listed in Appendix. We perform the Student's t-test and the Wilcoxon test respectively, to examine whether there are significant differences of mean and median between mega-deals with more experienced acquirers and ones with less experienced acquirers. In general, the evidence shows significant differences between the sub-groups.

In terms of successful mega-deals, we observe that transaction value (*Deal Value*) significantly increase with acquisition experience. In addition, as experience is measured by the previous number of acquisitions, there is also a significantly positive relation between acquirer size (*Market Cap*) and acquisition experience. The average deal value and acquirer's market value are nearly \$2 billion and \$60 billion respectively for mega-deals made by a more experienced acquirer, which is about \$0.5 billion and \$50 billion larger than ones made by an inexperienced acquirer. With a larger absolute deal size, however, mega-deals carried by more experienced acquirers are considerably smaller when comparing the relative size of the deal to acquirer's size (*Relative size* for the two groups are 31% and 64%). This might be explained by considering that acquirers make a trade-off between synergy gains and integration costs as they become larger (Ahern, 2010).

In addition, the statistics show that mega-deals conducted by more experienced acquirers tend to be paid in cash rather than stock, which might be explained by the fact that the cash flow ratio (*A_CF2TA*) is significantly higher for firms with high experience. Specifically, 57% of mega-deals conducted by more experienced acquirers are paid entirely with cash and 14% are paid entirely with stock in comparison with 33% and 21% for ones conducted by inexperienced acquirer, respectively. Moreover, the evidence suggests that mega-deals carried out by more experienced acquirers are more likely to involve a public target in different industries and are less likely to be competing bid and hostile offers than the counterparts carried out by inexperienced acquirers.

Similar findings are found for failed mega-deals, but several other statistics deserve attention. Specifically, we observe that the *Relative size* for mega-deals conducted by inexperienced acquirers is considerably higher, with an average value of 89%. This provides a potential explanation for their failure, suggesting that the deal might be too big and therefore too complex for these inexperienced firms to complete. Additionally, the evidence shows that failed mega-

deals generally have a higher likelihood of involving more than one bidder and being a hostile offer than in the successful sample, which is consistent with literature, e.g. Schwert (2000).

4. Empirical analysis

4.1 Do mega-deals undertaken by more experienced acquirers have a higher likelihood to successfully complete?

We begin by investigating whether a mega-deal conducted by a more experienced acquirer enjoys a higher completion rate by estimating the following linear probability model:

$$Pr(Deal\ Completion_i = 1) = \alpha_0 + \alpha_1 AcquisitionExperience_i + \alpha_2 Firm_i + \alpha_3 Deal_i + \varepsilon_i \quad (1)$$

where Pr denotes probability. The dependent variable ($Deal\ Completion_i$) takes a value of one if the mega-deal i is successfully completed, and zero otherwise. Our key explanatory variable of interest is the acquisition experience ($Experience$), which is the detrended number of acquisitions that an acquiring firm i completed before. In addition, we also construct a dummy variable *High Experience Dummy*, taking the value of one if the acquiring firm conducted more than 12 acquisition before, and zero otherwise. $Firm_i$ is a vector of the acquiring firm's characteristics, including the natural logarithm of its market value measured 4 weeks before the announcement (A_LNMV), the market-to-book ratio (A_TobinQ), the ratio of total debt by total capital ($A_Leverage$) and the ratio of cash flows by the total assets (A_CF2TA). $Deal_i$ represents a vector of deal explanatory variables, including the ratio of deal value by the acquirer's market value measured 4 weeks before the announcement (*Relative Size*), the indicator of target public status (*Public*), the indicator of competing bids (*Competing Bid*), the indicator of payment method (*Stock*), the indicator of acquisition attitude (*Hostile*), the indicator of tender offer (*Tender*), the indicator of whether the acquirer and the target are in related industries (*Diversification*) and the indicator of whether the deal is advised by top investment banks (*Top Advisor*). In all models, we also control for year and firm fixed effects. The models adjust standard errors for clustering.

[Insert Table 3 Approximately Here]

Table 3 reports the results of this analysis. The coefficients on *Experience* and *High Experience Dummy* are positive and highly statistically significant in all specifications, suggesting that the probability of completing a mega-deal increases with acquisition experience. In specification

(2), The magnitude of the coefficient on *Experience* indicates that every additional previous acquisition experience of an acquirer is associated with a 0.31% higher likelihood to complete the mega-deal. In specification (4), the involvement of acquirers with high experience (*High Experience Dummy*) increases the probability of success by 3.57%. Our results are consistent with our first hypothesis (*H1*). This can be explained by considering that more experienced acquirers excel at dealing with complexities during the pre-acquisition process, which might include selecting the right strategy to avoid antitrust violation and negotiating with target firms (Dikova et al., 2010).

In terms of the control variables, the two most important predictors are the hostile offer indicator (*Hostile*) and the competing bid indicator (*Competing bid*), with significant and negative coefficients of -0.4827 and -0.2246, respectively. This suggests that the probability of completing a mega-deal drops when the deal attitude is hostile and involves more than one bidder. In addition, the results also show that mega-deals with a relative large size are less likely to be completed, which is consistent with the evidence presented in descriptive statistics.

4.2 Do mega-deals undertaken by more experienced acquirers create value for acquirer shareholders in the short-run?

This section examines acquirer value creation around the announcement of mega-deals across different levels of acquisition experience. Both univariate analysis and multivariate analysis are conducted.

[Insert Figure 1 and Table 4 Approximately Here]

Figure 1 shows the development of acquirer's average yearly cumulative abnormal return over a 3-day event window for mega-deals between 1980 and 2016⁷. Consistent with Alexandridis et al. (2017), we observe that there is an improvement in acquirer returns from 2009 to 2015. However, the returns start to decrease after 2015. Table 4 shows results from the univariate analysis, which is divided by the level of acquisition experience and the status of deal completion. Three measures of announcement performance are employed. First, we report acquirers' average cumulative abnormal returns over the three-day (-1, +1) announcement window (*ACAR3*). *ACAR3* are calculated by using the market-adjusted return model,⁸ with the

⁷ An Augmented Dickey Fuller Test is conducted to examine whether mega-mergers CAR changes over time due to non-stationarity, and the evidence rejects the null hypothesis, suggesting that CAR does not have unit root.

⁸ Our results are robust when we use other models to measure *ACAR3*, e.g. Fama-French 5-factor model and estimate the model with 5-day event window.

estimation window [-301, -51] relative to the deal announcement. Overall, acquirers of mega-deals have negative mean $ACAR3$, measuring -0.47% and -1.18% in the successful sample and the failed sample, respectively. The higher $ACAR3$ of successful mega-deals suggests that the market can distinguish between deals that will be completed or terminated at the deal announcement. This is also consistent with Luo (2005) who finds that acquirers tend to extract information from announcement returns and then consider whether the deal should be completed. After partitioning the sample by acquisition experience level, our results indicate that in the successful sample, mega-deals conducted by more experienced acquirers on average generate a positive return around the deal announcement (0.09%), which is 0.74% higher than those with inexperienced acquirers, and the difference is significant at the 5% level. However, acquisition experience seems not to play a major role in the failed sample as there is an insignificant difference of $ACAR3$ between mega-deals undertaken by more experienced and less experienced acquirers.

In addition, we display the results for three-day dollar returns ($\$Return$) and returns per dollar spent ($\$Return/DealValue$) in 2016 dollars around deal announcements. The results show a similar pattern as the results on $ACAR3$. Following Malatesta (1983) and Moeller et al. (2005), we obtain dollar returns for each deal through multiplying the acquirer's three-day CARs (-1, +1) by the acquirer's market capitalisation two trading days before the deal announcement (event day -2). In the full sample, acquirers of mega-deals, on average, lose approximately \$97 million in the three days over the announcement period. By comparing sub-samples, the results show that in the successful sample, mega-deals carried out by acquirers with high experience on average create value of \$50 million or \$16 cents per dollar spent, while those carried out by inexperienced acquirers incur large losses of \$93 million or 4 cents per dollar spent. In the failed sample, mega-deals are subject to shareholder wealth loss regardless of the level of acquisition experience, and the dollar losses even increase with the experience level which might be due to the high valuation of the more experienced acquiring firm.

Overall, the results of the univariate analysis is consistent with the second hypothesis ($H2$), suggesting that mega-deals generate gains for shareholders under the execution of more experienced acquirers.

To take related factors into account, we further investigate the relation between mega-deal short-run performance and acquisition experience by conducting panel data regression with cluster robust standard error⁹:

$$ACAR3_{it} = \alpha_i + \alpha_t + \alpha_1 AcquisitionExperience_{it} + \alpha_2 Firm_{it} + \alpha_3 Deal_{it} + \varepsilon_{it} \quad (2)$$

$$\$Return_{it} = \alpha_i + \alpha_t + \alpha_1 AcquisitionExperience_{it} + \alpha_2 Firm_{it} + \alpha_3 Deal_{it} + \varepsilon_{it} \quad (3)$$

where the dependent variables in Equation (2) and (3) are three-day acquirer cumulative abnormal returns and three-day acquirer dollar gains, respectively. Like our analysis on deal completion, we examine acquisition experience with a continuous variable *Experience* which is the detrended number of acquisitions that an acquiring firm *i* completed before, and a dummy variable which equals one if the acquiring firm conducted more than 12 acquisitions before, and zero otherwise (*High Experience Dummy*). In addition to the control variables employed in Equation (1), we also control for market valuations and an acquirer's stock run-up which could exert influence on announcement returns (Bouwman et al., 2009; Petmezas, 2009). Firm fixed effects and year fixed effects are included in the panel data models using α_i and α_t respectively.

[Insert Table 5 Approximately Here]

Table 5 presents the results of this analysis. In models of Panel A we regress *ACAR3* on acquisition experience and in Panel B the dollar gain is regressed on acquisition experience. Both analyses are conducted within the full sample, successful sample, and failed sample. In Panel A, the coefficients of measures on acquisition experience are positive and statistically significant in the full sample and the successful sample. This suggests that acquisition experience has a greater impact on the short-run performance of successful mega-deals. Specifically, the evidence in specifications 1 and 3 shows that every additional acquisition experience significantly helps mega-deals create 0.18% and 0.19% more abnormal announcement returns in the full sample and the successful sample, respectively. In terms of the coefficient on *High Experience Dummy*, our results suggest that mega-deals carried by more experienced acquirers generally enjoy a higher announcement return of 1.73% in the full

⁹ Since there are repetitive acquirers, we need to control for within cluster error correlation as advocated by Peterson (2009) and Cameron and Miller (2011). This is done by clustering firms using their firm IDs.

sample and 2.11% in the successful sample. Regarding failed mega-deals, the evidence indicates that the market reactions are insignificantly different to acquirers with different levels of acquisition experience, with the coefficient of -0.01% on *Experience* and 1.35% on *High Experience Dummy*.

Panel B shows the results of the relation between dollar returns and acquisition experience, which is consistent with evidence on abnormal stock returns. We find that *\$Return* is significantly positively related to acquisition experience in the overall sample and successful sample, while the effects of acquirer experience are insignificant in failed mega-deals. Specifically, the coefficients on *Experience* suggest that with an additional previously completed acquisition, mega-deals generate more values of \$70 million and \$66 million for acquirer shareholders in the full sample and the successful sample respectively. For *High Experience Dummy*, the magnitude of the coefficient in model (2) and (4) indicates that mega-deals conducted by acquirers with high experience are associated with \$407 million and \$394 million more dollar gains in the full sample and the successful sample respectively. Overall, our results of short-run analysis are consistent with the second hypothesis, indicating that mega-deals will generate value for shareholders if the deal is conducted by acquirers with more experience.

With regard to control variables in all regressions, the coefficients on the logarithm of the bidders' market capitalization one month before the deal announcement (*A_LNMV*) are significantly negative, suggesting that the market is less in favour of mega-deals involving larger bidders, which is consistent with Moeller et al. (2004). In addition, *ACAR3* is significantly higher if the acquirer has a higher leverage ratio (*A_Leverage*) and a higher cash flow ratio (*A_CF2TA*), which supports the study of Maloney et al. (1993) and Harford (1999). Moreover, in line with Travlos (1987), mega-deals that are fully paid for in stock considerably destroy more abnormal returns for acquirers' shareholders.

4.3 Do mega-deals undertaken by more experienced acquirers create value for acquirer's shareholders in the long-run?

In the previous section, our results indicate that acquirers make use of previous successful experience and more experienced acquirers are rewarded at the announcement of mega-deals. To investigate whether a more experienced acquirer eventually helps a mega-deal create more value, this section assesses long-run performance based on bidders' abnormal stock returns and

post-merger operating performance. Stock price returns are employed to examine the market valuation of the mega transaction while the accounting-based approach investigates the achieved operational changes during the same period. If acquirers with high experience are more proficient at the integration process, we would expect to find a better long-run performance. Both univariate and multivariate analyses are displayed.

4.3.1 Long-run stock performance

[Insert Table 6 Approximately Here]

Table 6 presents the mean buy-and-hold abnormal returns (BHARs) for bidders over 12-, 24- and 36-month periods and draws a comparison between the BHARs of more and less experienced acquirers based on deal completion status. Acquirer BHARs are computed by using size- and book-to-market ratio-adjusted returns and the t-statistics are bootstrapped in order to eliminate the new listing bias and rebalancing bias (Lyon et al., 1999). In terms of the full sample, we observe that mega-deals remarkably destroy value for acquirer shareholders in the long term, regardless of the completion status and event windows employed.

After dividing the sample based on the level of acquirer experience, we find a significant positive relation between BHARs and acquisition experience, which supports our hypothesis suggesting that acquirer experience plays an essential role in helping mega-deals create value. For successful mega-deals, those with more experienced acquirers generate abnormal returns of -0.13%, -2.19%, and 0.95% over the 12-, 24-, and 36-month period after the deal announcement, which are 3.94%, 5.80%, and 8.97% higher than their counterparts with less experienced acquirers and the differences are significant at the 5% level. The difference between mega-deals carried out by more experienced acquirers and inexperienced acquirers becomes even larger in the failed sample, reaching 8.19%, 12.83%, and 23.46% for *BHAR12*, *BHAR24*, and *BHAR36*, respectively. This finding is mainly because terminated mega-deals by inexperienced acquirers destroy value considerably. Failure to complete the deal is more costly for inexperienced acquirers, implying that market does not welcome incompetent firms to conduct mega-deals but unable to consummate.

[Insert Table 7 Approximately Here]

To confirm the superior performance of mega-deals conducted by more experienced acquirer, in Table 7, we perform the long-term panel data regression analysis with cluster robust standard error as follows:

$$BHAR36_{it} = \alpha_i + \alpha_t + \alpha_1 AcquisitionExperience_{it} + \alpha_2 Firm_{it} + \alpha_3 Deal_{it} + \varepsilon_{it}$$

(4)

where *BHAR36* is modelled as a function of the acquisition experience measures. A set of firm, deal, and market characteristics is controlled, which is described in the analysis on short-run performance, and we also include year fixed effects and firm fixed effects.

In accordance with the univariate results and our hypothesis, a mega-deal's long-run performance is positively associated with both experience measurements in all regressions. Specifically, in terms of the successful sample, *Experience* and *High Experience Dummy* remarkably increase the long-run abnormal returns by 0.71% and 21.65% in specifications (1) and (2), respectively. Regarding the failed sample, the coefficients of *Experience* and *High Experience Dummy* are positive but insignificant. Overall, our evidence suggests that more experienced acquirers are rewarded by the market if they successfully conduct mega-deals.

Consistent with the evidence of short-term analysis, we find that the 36-month BHARs are remarkably higher if the bidder has a higher cash flow ratio (*A_CF2TA*), while the coefficient of *Stock* is negative and significant in all specifications. In addition, the coefficient on *Market Valuation* suggests that acquirers would suffer lower long-run returns if they undertake mega-deals during the high valuation stock market, which is in line with Petmezas (2009).

4.3.2 Long-run operating performance

Previous analyses show that mega-deals with more experienced acquirers deliver significantly more returns to shareholders than ones with less experienced acquirers. If the reason behind is that more experienced acquirers can manage the complexity of mega transactions better than ones with less experience, we should also expect to find a better long-run operating performance for mega-deals carried by more experienced acquirers.

[Insert Table 8 Approximately Here]

Following Healy et al. (1992), Ramaswamy and Waagelein (2003), and Alexandridis et al. (2013), we employ the return on assets (*ROA*) adjusted by industry to measure the operating performance for bidders. *ROA* is the ratio of net income to the book value of total assets,¹⁰ and then we adjust the ratio by deducting the median *ROA* of peers in the same industry in a given

¹⁰ The results are robust when we use operating income rather than net income to calculate *ROA*.

year¹¹. Table 8 reports the bidder's operating performance characterized by different levels of experience for up to three years relative to the year of the deal announcement.

Panel A shows the results of successful mega-deals. Overall, we observe different levels of operating performance across the acquisition experience levels. Acquirers with high experience exhibit superior operating performance than inexperienced acquirers both before and after the announcement of mega-deals. In addition, for all acquirers completing mega-deals, there is a general decreasing performance from year -1 to year +3 around the deal announcement. This suggests that firms typically choose a time of good operating performance to prepare a mega-deal but it is difficult to improve or even sustain that level of performance over a long-run period following a mega-transaction. Compared to acquirers with high experience, however, inexperienced acquirers show a bigger drop in post-merger performance. Specifically, the median ROA of acquirers with low experience for the three years pre-acquisition is 2.97% and decrease to 2.81% over the three-year period after the mega-deal announcement, where the difference is 0.15% and significant at the 5% level. For acquirers with high experience, on the other hand, the post-merger operating performance decreases insignificantly, by 0.10%. This pattern also exists in the operating performance for the failed sample in Panel B. The outperformance of more experienced acquirers is consistent with the hypothesis and our previous findings of the better short-run and long-run stock performance.

To further investigate the relation between operating performance following mega-deals and acquisition experience, this paper conducts the fixed effect regression as follows:

$$\Delta ROA_{it} = \alpha_i + \alpha_t + \alpha_1 AcquisitionExperience_{it} + \alpha_2 Firm_{it} + \alpha_3 Deal_{it} + \varepsilon_{it} \quad (5)$$

,where the dependent variable is the difference in the acquirer's *ROA* between the pre- and post-merger period. Our key variable of interest is *AcquisitionExperience_i*, while the regressions also control for firm and deal factors that can determine operating performance and are described in previous equations. Both firm fixed effect and year fixed effect are included in our model.

[Insert Table 9 Approximately Here]

Table 9 displays the regression results, showing that the changes in post-merger operating performance are positively associated with acquisition experience, and the coefficients on

¹¹ The paper employs the 12-industry classification by Fama and French.

acquisition experience are significant in models (1) and (2) of successful sample. Specifically, the coefficient on *Experience* in column (1) suggests that every additional completed acquisition is related to 0.15% *ROA* improvement over the three-year period following a mega-deal announcement. In addition, the magnitude of acquisition experience impact increases to 2.76% when the ΔROA is regressed on *High Experience Dummy*, suggesting that acquirers with high experience generally have a better operating performance improvement than less experienced acquirers after the completion of mega-deals. In the failed sample, we find that acquisition experience has only an insignificant effect on an acquirer's post-merger operating performance changes. Overall, the evidence is supportive of our hypothesis and indicates that to deal with the complexity of mega-deals and achieve better performance, it is essential for acquiring firms to gather more experience before conducting mega transactions.

In terms of firm and deal characteristics, our analysis shows that there is a greater operating performance improvement after mega-deals when acquirers are with high leverage ratio (*A_Leverage*), which is an indication that more financially constrained bidders under better creditor monitoring tend to conduct better deals. In addition, acquirers with a high cash flow ratio (*A_CF2TA*) are significantly related to a smaller ΔROA , which is consistent with Jensen's (1986) free cash flow theory suggesting that large free cash flows can lead to agency problem. Moreover, consistent with the regression of short-run and long-run stock performance, we observe a significant and negative sign of *Stock* in the successful sample.

5. Robustness checks

5.1 Endogeneity issue

Previous sections suggest a positive relation between mega-deals performance and acquirer's acquisition experience, but our results could also be driven by self-selection based endogeneity. As strategic corporate decisions, mergers and acquisitions are discrete choices driven by manager's anticipated performance instead of a random pattern (Castañer et al., 2014; Hamilton and Nickerson, 2003; Sampson, 2004). There could be omitted variables driving such expectations of performance, e.g. managerial skill and social pressure, which are likely to influence both the takeover decision and the performance outcome. As every takeover decision is subject to self-selection bias, the accumulation of acquisition experience also tends to be endogenous (Haleblian et al., 2006). For example, a firm that has the capability of conducting

a value-increasing takeover will have a high level of acquisition experience and also enjoy better performance with mega-deals.

To account for the potential endogeneity issue, our study employs the Instrumental Variable (IV) approach and conducts the two-stage least squares (2SLS) regression to analyze the effect of acquisition experience on mega-deals' performance. We use firm location and firm age as the instrument variables to predict firm acquisition experience, which is motivated by previous research suggesting that firms will have more acquisition opportunities and undertake more deals if they are older and located in metropolitan statistical areas (Almazan et al., 2010; Cai et al., 2016).¹² Specifically, a dummy variable *Urban* is constructed, taking the value of one if the firm is headquartered in the 10 largest metropolitan statistical areas on the U.S. government list, and zero otherwise. In addition, a firm's age is estimated with the duration between the earliest year of a firm listed in Compustat and the year of the mega-deal announcement. The 2SLS regression is estimated by the following equations:

$$\left\{ \begin{array}{l} AcquisitionExperience_i = \alpha_0 + \alpha_1 Urban_i + \alpha_2 Age_i + \alpha_3 Firm_i + \alpha_4 Deal_i + f_y \\ \quad \quad \quad + f_{firm} + \varepsilon_i \\ \\ ACAR3_i = \beta_0 + \beta_1 \widehat{AcquisitionExperience}_i + \beta_2 Firm_i + \beta_3 Deal_i + f_y \\ \quad \quad \quad + f_{firm} + \varepsilon_i \end{array} \right. \quad (6)$$

, where the first stage is the regression of acquisition experience on the instrumental variables *Urban_i* and *Age_i* as well as the firm and deal characteristics. In the second stage, mega—deals' performance is regressed against the model-estimated $\widehat{AcquisitionExperience}_i$ from the first stage in addition to a set of related control variables. Firm and year fixed-effect are included in the analyses.

[Insert Table 10 Approximately Here]

Table 10 shows the estimates from the 2SLS regression of mega-deals announcement performance. Consistent with previous literature, the evidence in the first-stage indicates that firm experience is significantly greater within the 10 largest metropolitan statistical areas and

¹² According to U.S. Office of Management and Budget, metropolitan statistical area (MAS) represents an area with at least one urban major city of a relatively high population density and significant social and economic interaction.

increases with firm age, regardless of whether we use continuous variable *Experience* or dummy variable *High Experience Dummy* to measure a firm's acquisition experience. In addition, the existence of endogeneity, the validity and the strength of instrument variable are tested and reported. Specifically, the p-value of 0.0135 from the Hausman test is the 5% level of significance where the null hypothesis can be rejected, suggesting that acquisition experience is not exogenous in our analysis. The insignificant estimate from the Sargan test and the Cragg-Donald Wald *F*-statistic that is greater than 10 imply that the instruments are valid and our IV regression is not affected by the weak instrument issue.

Regarding the second-stage results, the coefficient on *Predicted Experience* is 0.0024 in Model (2) and on *Predicted High Experience Dummy* is 0.0197 in Model (4), and both are significant at the 5% level. This suggests that mega-deals with more experienced acquirers create more value for acquirer's shareholders, which confirms our previous results.

5.2 Threshold model of short-run stock performance

This paper tests the robustness of our results on the relation between firm's acquisition experience and mega-deal's performance by conducting a threshold model following Hansen (2000). The fundamental advantage of the threshold regression is that the existence of breakpoint can be endogenously detected and determined, and therefore this enables us to examine that to what extent the acquisition experience could translate into the capability of successfully conducting a mega-merger. The threshold model is constructed as follows:

$$\begin{aligned}
 ACAR3_i &= \begin{cases} \alpha_0 + \alpha_1 Experience_i + \alpha_2 Firm_i + \alpha_3 Deal_i + f_y + f_{firm} + \varepsilon_i & \text{if } Experience_i \leq \gamma \\ \beta_0 + \beta_1 Experience_i + \beta_2 Firm_i + \beta_3 Deal_i + f_y + f_{firm} + \varepsilon_i & \text{if } Experience_i > \gamma \end{cases}
 \end{aligned} \tag{7}$$

where $ACAR3_i$ represents acquirer's three-day cumulative abnormal return; $Experience_i$ is the number of acquisitions completed by an acquirer before the mega-deal of our interest, which is the key explanatory variable and also the threshold variable; $Firm_i$ and $Deal_i$ are vectors of acquirer's and deal's characteristics, respectively; f_y is year fixed effects and f_{firm} is firm fixed effects; γ represents the threshold value to be estimated.

[Insert Table 11 Approximately Here]

Table 11 reports the results of the threshold regression. It is confirmed that there is a single threshold on acquisition experience equal to four. The coefficients confirm our previous results that mega-deals with more experienced acquirers significantly generate more abnormal gains for shareholders around deal announcement. Interestingly, the evidence shows that the coefficient of *Experience* is significantly positive when acquirers completed more than 4 acquisitions before (0.0027), whereas it is insignificant when *Experience* is less than or equal to the threshold value (0.0028). This suggests that firms with four or less than four completed acquisitions have not accumulated enough experience for mega-deal and are incapable of successfully conduct a value-increasing transaction. In contrast, for acquirers with more than four completed acquisitions, their accumulated experience is able to turn into sophisticated skills and therefore, following the fourth acquisition, the performance of mega-deal increases with every additional acquisition experience.

5.3 Pre- and Post-2009 Acquirer's Performance

[Insert Table 12 Approximately Here]

Alexandridis et al. (2007) suggests that mega-deals during the post-2009 period are value-increasing investment for acquirers, while mega-deals before 2009 are subject to negative abnormal announcement returns. To take this evidence into account, we conduct analysis to investigate whether acquisition experience plays a role in mega-deals completion and gains in both pre-2009 and post-2009 period. Models (1) and (2) reports linear probability model of mega-deal completion while models (3) and (4) shows panel data regressions of acquirer's short-run performance over time periods of 1980-2009 and 2010-2016. As seen in the table 12, the coefficients of *Experience* are significantly positive in all models, regardless of the time period. Specifically, *Experience* considerably increases the probability of completing mega-deals by 0.19% and 0.62% over the period of 1980-2009 and 2010-2016, respectively. In addition, short-run abnormal returns are increased with acquisition experience by 0.17% and 0.29% over two periods, respectively. This confirms the positive role of acquirer's experience playing in mega-deals, which is consistent with previous results.

5.4 Robustness Check for Definition on Acquisition Experience

[Insert Table 13 Approximately Here]

This paper employs the number of M&As transactions as the proxy for acquirer's acquisition experience. To investigate whether this proxy captures the learning mechanisms, we follow Aktas et al., (2013) and conduct an additional test to examine the relation between the deal order number (*DON*), i.e. the mega-deal's sequence for a given acquirer, and the time elapsed between successive deals (*TBD*), i.e. the number of days between the most recent completed deal and the announcement date of the current mega-deal. According to Hayward (2002), learning increases with *TBD* in experience building situation and decreases with *TBD* in memory loss situations. Therefore, the sample is divided into short *TBD* and long *TBD* subsamples. Short and long *TBD* are *TBD*s below and above the sample median respectively. Experience-related variables, e.g. investment banks' reputation, CEO experience and serial acquirers, are included in the analysis. The results show that *TBD* is negatively related to *DON* for short *TBD* subsample but positively related to *DON* for long *TBD* subsample, which is consistent with Aktas et al., (2013) and suggests the existence of learning mechanism.

5.5 Robustness Check for Acquirer's Long-run Stock Performance

[Insert Table 14 Approximately Here]

In terms of acquirer's long-run stock performance, we follow Mitchell and Stafford's (2000) and employ calendar-time portfolio methodology to conduct a robustness check. Specifically, we construct Equal-Weight and Value-Weight portfolios of sample firms that conducted mega-deal during the previous 36 months. Portfolios are reconstructed every month by deleting firms that at the end of their 36 months period and adding firms that have just conducted a deal. The portfolio excess returns are regressed on the Fama and French (1993) three-factor model. Only successful deals are examined. The results are presented in Table 14 and show that experienced acquirers tend to have better stock performance in the long-run, which is consistent with our previous results.

6. Conclusion

Mega-deals, as a strategic move, play an essential role in firm's development which could also reshape the industry and even influence the whole economy. However, prior literature has investigated mega-deals as an independent event and suggests that large deals generally destroy value for acquirer shareholders except ones conducted after 2009. This paper provides evidence on how mega-deals can enjoy a bright outcome, showing that firms with more acquisition

experience make better mega-deal decisions. Specifically, we conduct several analyses of mega-deals' outcomes, including deal completion, acquisition announcement returns and long-run returns, as well as post-deal operating performance.

Our main findings show that mega-deals carried out by acquirers with a higher level of experience are more likely to complete and enjoy a better stock and operating performance in both the short- and long-run, regardless of whether the deal is completed or failed. In particular, the average abnormal announcement returns of successful mega-deals translate into a shareholder value gain of \$50.6 million. For failed mega-deals, inexperienced acquirers suffer from the continuing decline in a firm's performance while more experienced acquirers recover from the failure over the three-year following the mega-deal's announcement. Overall, our evidence suggests that although mega-deals involve great uncertainty and integration complexity, the whole process can be better facilitated by acquirers with a higher level of acquisition experience, and eventually create value for acquirer shareholders.

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Appendix A

Variable	Definition
Panel A:	
Dependent Variables	
Completion	Dummy variable that equals 1 if merger transaction is completed.
ACAR3	Cumulative abnormal return of the acquiring firm in the 3-day event window (-1, +1) surrounded on the announcement day. The expected returns are from a market-adjusted return model with the parameters estimated over 301 trading days ending 51 days before the announcement. As benchmark we use the CRSP value-weighted index.
\$Return	Following Malatesta (1983) and Moeller et al. (2005), \$Return is obtained by multiplying the acquirer's three-day CARs (ACAR3) by the acquirer's market capitalisation two trading days before the deal announcement (event day -2).
BHAR36	Buy-and-hold abnormal return of the acquiring firm from size-adjusted model in the 36-month event window following the announcement.
Δ ROA	The difference in the acquirer's industry-adjusted ROA between -3 and +3 years relative to deal announcement. ROA is calculated as the ratio of net income to total assets. Industry-adjusted ROA is calculated by subtracting the median ROA of the corresponding industry from the firm ROA.
TBD	Following Aktas et al., (2013), TBD is defined as the number of days between the most recent completed deal and the announcement date of the current mega-deal. Short TBD is a TBD below the sample median. Long TBD is a TBD above the sample median.
Panel B:	
Key independent variable	
Experience	The detrended number of acquisitions that a sample acquiring firm completed before the mega-deal of interest.
High Experience Dummy	Dummy variable that equals 1 if mega-deals conducted by acquirers with high experience (more than 12 acquisitions completed before).
Panel C:	
Firm characteristics	
A_LNMV	The logarithm of the acquirer market value measured 4 weeks before the merger announcement. The market value is calculated as the number of shares outstanding multiplied by the respective stock price at 4 weeks before the M&As announcement.

Market-to-book (A_M2B)	The ratio of market value by book value of the acquirer's assets.
FCF-to-asset (A_CF2TA)	The ratio of acquirer's cash flows by the total assets at the fiscal year end before the M&As announcement.
Leverage (A_Leverage)	The ratio of acquirer's total debt by total capital at the fiscal year end before the M&As announcement.
Acquirer stock run-up (Run-up)	The market-adjusted return of acquiring firms over the period from 200 trading days to 2 months before the merger announcement.
CEO Experience	The number of acquisitions that acquirer's CEO completed before the mega-deal of interest.
Serial Acquirers	Acquirers that conduct more than two deals over a three-year window before the mega-deal of interest.
CTAR12/24/36	Calendar time abnormal return of the acquiring firm in the 12-, 24- and 36-month event window following the announcement.

Panel D:

Deal characteristics

Deal Value	Value of the transaction in millions of Dollars.
Relative Size (RTV)	The variable was calculated as merger transaction value divided by the acquirer market value of equity 4 weeks before the merger announcement.
Hostile	Dummy variable that equals 1 if the deal attitude is identified as hostile.
Stock	Dummy variable that equals 1 if the deal is 100% paid by stock.
Competing Bid	Dummy variable that equals 1 if there are more than one bidder.
Public	Dummy variable that equals 1 if the target is a public firm.
Tender	Dummy variable that equals 1 if the deal is identified as a tender offer.
Diversification	Dummy variable that equals 1 if the acquirer and the target have the different first two-digit of primary SIC code.
Time to Completion	Gap period between merger announcement date and completion date.
Market Valuation	Following Bouwman <i>et al.</i> (2009), we identify high-, neutral- and low-valuation markets by comparing the detrended P/E ratio of the value-weighted market index with its past 5-year average.
Top Advisor	Following Rau (2000), we identify top advisors by using SDC league table of investment banking. Top Advisor equals 1 if the investment bank averagely ranks the top 5.
DON	The mega-deal's sequence for a given acquirer.

Panel E:

Instrumental variables

Urban	Dummy variable that equals 1 if the acquiring firm is headquartered in the 10 largest metropolitan statistical areas on the U.S. government list.
Age	The difference between the year of acquiring firm listed in Compustat and the year of mega-deal announcement.

Figure 1 – The Evolution of Mega-Deals 3-Day Cumulative Abnormal Return (CAR)

This figure shows the development of acquirer's average yearly cumulative abnormal return over a 3-day event window for mega-deals between 1980 and 2016.

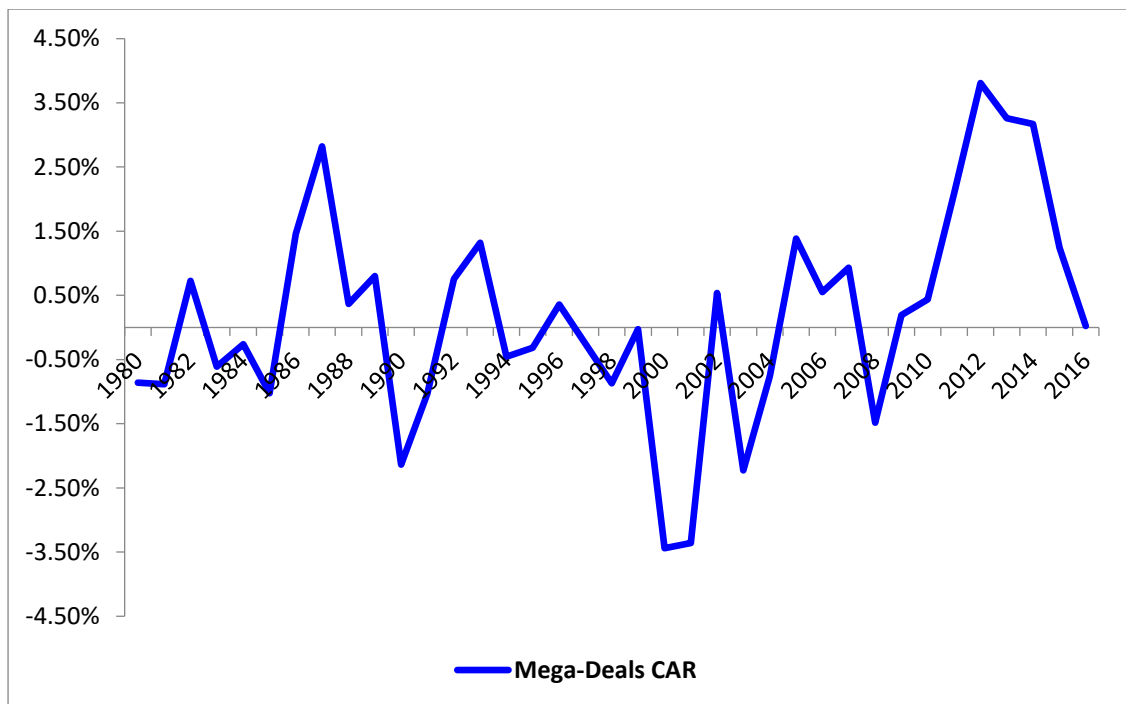


Table 1 – Number of Mega-deals

This table reports the number of mega-deals by year. It also shows the annual number of mega-deals by acquirer's previous acquisition experience. The statistics are provided based on a sample of 3,544 U.S. M&A samples with the transaction value of at least \$500 million in 2016 dollar terms. The announcement date is between January 1, 1980 and December 31, 2016. The acquirer owns less than 10% of target's shares prior to the deal announcement and more than 50% after the deal. The acquirer is not from financial industry (SIC code 6000-6999) and utilities industry (SIC code 4900-4949). Acquirers are public firms with stock price data and accounting data available on CRSP and Compustat, respectively.

Year	Full Sample		Firm Experience	
		Low (1)	Moderate (2)	High (3)
1980	14	14	0	0
1981	37	37	0	0
1982	32	30	2	0
1983	33	28	5	0
1984	76	57	18	1
1985	87	60	27	0
1986	86	57	28	1
1987	81	51	28	2
1988	92	38	49	5
1989	76	27	45	4
1990	27	11	15	1
1991	30	12	15	3
1992	32	12	18	2
1993	51	22	25	4
1994	85	34	37	14
1995	88	27	50	11
1996	125	34	75	16
1997	184	67	87	30
1998	178	55	82	41
1999	215	57	102	56
2000	235	83	93	59
2001	99	30	44	25
2002	74	21	32	21
2003	66	21	21	24
2004	89	24	35	30
2005	105	30	47	28
2006	126	27	52	47
2007	116	33	54	29
2008	79	12	39	28
2009	66	11	26	29
2010	102	19	43	40
2011	91	13	40	38
2012	116	23	51	42
2013	118	23	43	52
2014	141	42	51	48
2015	176	46	54	76
2016	116	23	43	50
Total	3,544	1,211	1,476	857

Table 2 – Summary statistics

This table reports the summary statistics of 3,544 U.S. M&A samples with the transaction value of at least \$500 million in 2016 dollar terms. Panel A and Panel B show deal related characteristics and acquirer related characteristic, respectively. All variables are defined in Appendix. M&A deals are restricted by the following criteria. First, the announcement date is between January 1, 1980 and December 31, 2016. Second, the acquirer is a public firms and the target firm can be public, private or subsidiary. Third, the inflation-adjusted deal value is at least \$500 million. Fourth, the acquirer owns less than 10% of target's shares prior to the deal announcement and more than 50% after the deal. Fifth, the acquirer is not from financial industry (SIC code 6000-6999) and utilities industry (SIC code 4900-4949). Last but not least, the acquirer has stock price data and accounting data available on Centre for Research in Security Prices (CRSP) and Compustat, respectively. First, we present the mean and median values for the full sample. Next, we sub-divide our sample based on whether the deal is completed and the level of acquisition experience. All continuous variables are winsored at 1% and 99% level. The t-test and Wilcoxon test are used to test for statistical significance of means and medians, respectively. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

		Successful sample					Failed sample			
		Full sample	Firm experience				Firm experience			
			Low (1)	Moderate (2)	High (3)	Dif. (3)-(1)	Low (4)	Moderate (5)	High (6)	Dif. (6)-(4)
Panel A - Deal characteristics										
Deal value (\$mil) (adjusted by 2016)	Mean	1609.41	1308.56	1385.37	1845.06	536.50***	1636.66	1708.93	2403.13	766.47***
	Median	1194.28	1002.37	1142.12	1571.99	569.62***	1236.64	1877.70	1803.60	566.96***
	N	3,544	1,002	1,282	758		209	194	99	
Relative size	Mean	0.52	0.64	0.56	0.31	-0.33***	0.89	0.89	0.58	-0.31***
	Median	0.23	0.38	0.22	0.09	-0.29***	0.83	0.42	0.12	-0.71
	N	3,911	991	1,272	755		208	192	99	
All stock %	Mean	18.43%	21.26%	19.03%	13.98%	-7.27%***	18.18%	20.62%	12.12%	-6.06%
	N	3,544	1,002	1,282	758		209	194	99	
All cash %	Mean	43.40%	33.43%	42.04%	57.12%	23.69%***	33.49%	46.91%	70.71%	37.21%***
	N	3,544	1,002	1,282	758		209	194	99	
Competition %	Mean	7.25%	4.79%	4.60%	2.77%	-2.02%**	26.32%	32.99%	10.10%	-16.21%***
	N	3,544	1,002	1,282	758		209	194	99	
Public %	Mean	67.61%	60.18%	66.07%	67.28%	7.10%***	84.21%	86.08%	93.94%	9.73%***
	N	3,544	1,002	1,282	758		209	194	99	
Hostile %	Mean	5.56%	2.30%	2.03%	0.92%	-1.37%**	31.10%	28.87%	20.20%	-10.90%***
	N	3,544	1,002	1,282	758		209	194	99	
Diversified %	Mean	30.70%	29.24%	30.81%	33.51%	4.27%*	34.93%	27.84%	19.19%	-15.74%***
	N	3,544	1,002	1,282	758		209	194	99	

Time to completion	Mean	154.27	144.23	155.95	165.02	20.79*				
	Median	95.00	97.00	96.00	93.50	-3.50				
	N	3,042	1,002	1,282	758					
Tender %	Mean	16.62%	17.07%	17.00%	15.44%	-1.63%	22.97%	13.92%	8.08%	-14.89%***
	N	3,544	1,002	1,282	758		209	194	99	
Market Valuation	Mean	0.94	1.02	0.94	0.79	-0.22***	1.00	0.94	0.96	-0.05
	N	3,544	1,002	1,282	758		209	194	99	
Panel B - Acquirer characteristics										
Market cap (\$mil) (adjusted by 2016)	Mean	22697.72	8520.71	14762.04	58624.73	50104.02***	6054.25	12820.44	46577.21	40522.96***
	Median	6564.12	3522.24	6409.02	24899.02	21376.78***	2180.43	5311.66	16156.92	13976.49***
	N	3,517	991	1,272	755		208	192	99	
Market-to-book	Mean	4.67	4.38	4.63	4.81	0.43	3.67	4.26	5.85	2.18
	Median	2.88	2.40	2.91	3.37	0.97***	2.32	3.01	3.43	1.11***
	N	2,565	669	936	603		146	133	78	
FCF-to-asset	Mean	0.08	0.08	0.09	0.09	0.01***	0.08	0.08	0.09	0.01
	Median	0.09	0.08	0.09	0.09	0.01***	0.08	0.08	0.08	0.00
	N	2,553	671	925	597		147	134	79	
Leverage	Mean	0.37	0.35	0.36	0.36	0.01	0.42	0.43	0.37	-0.05
	Median	0.34	0.32	0.35	0.34	0.02	0.38	0.42	0.35	-0.02
	N	2,573	677	937	601		147	133	78	
Acquirer stock run-up %	Mean	0.08	0.11	0.10	0.06	-0.05***	0.05	0.06	0.05	0.00
	Median	0.05	0.08	0.06	0.05	-0.03***	0.03	0.03	0.04	0.02
	N	3,439	929	1,271	753		194	193	99	
Acquisition experience (Number of completed acquisition)	Mean	7.89	2.02	6.54	19.59	17.57***	0.97	5.00	15.25	14.28***
	Median	5.00	2.00	6.00	17.00	15.00***	1.00	5.00	13.00	12.00***
	N	3,544	1002	1282	758		209	194	99	

Table 3 – Linear probability models of deal completion

This table reports results of linear probability model of mega-deal completion. The key variables in Models (1) and (2) are Experience and in Model (3) and (4) are High Experience Dummy. Experience is the detrended number of acquisition completed before the mega-deal of our interest. High Experience Dummy takes the value of 1 if the mega-deal is carried by acquirers with a high level of experience, i.e. more than 12 completed acquisitions, and 0 otherwise. All models include firm and year fixed effects. For brevity, their coefficients are not reported in the table. Detailed variable definitions are shown in the Appendix B. All continuous variables are winsorized at the 1% and 99% levels. P-value is reported in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Completion	Model (1)	Model (2)	Model (3)	Model (4)
Experience	0.0032*** (0.001)	0.0031*** (0.001)		
High Experience Dummy			0.0523*** (0.000)	0.0357** (0.039)
A_LNMV	0.0138** (0.011)	0.001 (0.872)	0.0066 (0.182)	0.0023 (0.707)
A_M2B	-0.0001 (0.651)	0 (0.833)	-0.0001 (0.648)	0 (0.797)
A_CF2TA	0.0549 (0.610)	0.1242 (0.204)	0.0281 (0.746)	0.1297 (0.183)
A_Leverage	-0.0088 (0.292)	-0.037 (0.164)	-0.0321 (0.191)	-0.0396 (0.137)
RTV		-0.0179 (0.273)		-0.0201 (0.211)
Public		-0.1225*** (0.000)		-0.1238*** (0.000)
Competing Bid		-0.2246*** (0.000)		-0.2255*** (0.000)
Stock		0.0317 (0.102)		0.0320* (0.098)
Diversification		0.0074 (0.600)		0.0121 (0.392)
Tender		0.1558*** (0.000)		0.1552*** (0.000)
Hostile		-0.4827*** (0.000)		-0.4824*** (0.000)
Top Advisor		0.0700*** (0.000)		0.0701*** (0.000)
Constant	-0.0215 (0.126)	0.012 (0.433)	-2.0417 (0.213)	0.0131 (0.360)
Year effect	Yes	Yes	Yes	Yes
Firm effect	Yes	Yes	Yes	Yes
N	2,498	2,498	2,498	2,498
Adjusted R ²	0.055	0.23	0.055	0.231

Table 4 – Acquirer short-run performance analysis

This table reports mean and median values on measures of acquirer's announcement performance, including *ACAR3*, *\$Return*, and *\$Return/DealValue*. *ACAR3* is acquirer's cumulative abnormal return over 3-day event window surrounding the announcement date. *\$Return* is dollar gains calculated through multiplying *ACAR3* by the acquirer's market capitalisation two trading days prior to the announcement day. *\$Return/DealValue* is dollar gains per dollar spent, which is the ratio of *\$Return* and deal value. First, we present the values for the full sample. Next, we sub-divide our sample based on whether the deal is completed and the level of acquisition experience. The t-test and Wilcoxon test are used to test for statistical significance of means and medians, respectively. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Full sample			
	ACAR3	\$Return	\$Return/DealValue
Panel A: Successful sample			
Mean	-0.0047***	-97.8839**	0.0065
Median	-0.0005	-1.6892	-0.0014
N	2,970	2,940	2940
Panel B: Failed sample			
Mean	-0.0118***	-97.4907	-0.0214
Median	-0.0042	-10.6411	-0.0087*
N	495	490	490
Diff (B)-(A)			
Mean	-0.0071*	0.3933	-0.0278
Median	-0.0037*	-8.9519	-0.0073
Low experience			
	ACAR3	\$Return	\$Return/DealValue
Panel C: Successful sample			
Mean	-0.0065**	-93.2032*	-0.0372
Median	-0.0025	-4.7123	-0.0044
N	958	947	947
Panel D: Failed sample			
Mean	-0.0097	-63.5130***	-0.0374
Median	-0.0039	-6.0548	-0.0058
N	204	203	203
Diff (D)-(C)			
Mean	-0.0032	29.6901	-0.0002
Median	-0.0014	-1.3425	-0.0014
Moderate experience			
	ACAR3	\$Return	\$Return/DealValue
Panel E: Successful sample			
Mean	-0.0066***	-156.8446***	-0.0514
Median	-0.0016	-5.1310	-0.0039
N	1,260	1,250	1,250
Panel F: Failed sample			
Mean	-0.0176***	-111.9517***	-0.0268
Median	-0.0057	-19.8914	-0.0124
N	192	190	190
Diff (F)-(E)			
Mean	-0.0110*	44.8929	0.0247
Median	-0.0041	-14.7604	-0.0085
High experience			

	ACAR3	\$Return	\$Return/DealValue
Panel G: Successful sample			
Mean	0.0009	50.6119	0.1596
Median	0.0014	19.3941	0.0155
N	752	749	749
Panel H: Failed sample			
Mean	-0.0047	-140.2728	0.0229
Median	-0.0028	-13.8302	-0.0112
N	99	99	99
Diff (H)-(G)			
Mean	-0.0055	-190.8847	-0.1367
Median	-0.0042	-33.2243	-0.0267
The difference between low experience and more experience			
	ACAR3	\$Return	\$Return/DealValue
Panel I: Successful sample			
Diff (G)-(C)			
Mean	0.0074**	143.8151	0.1968*
Median	0.0039	24.1063	0.0199**
Panel J: Failed sample			
Diff (H)-(D)			
Mean	0.0050	-76.7598*	0.0603
Median	0.0011	-7.7755	-0.0053

Table 5 – Panel data regressions of acquirer short-term performance

This table reports panel data regressions of acquirer's short-term performance. *ACAR3* is the dependent variable in models of Panel A, which is acquirer's cumulative abnormal return over 3-day event window surrounding the announcement date. *\$Return* is the dependent variable in models of Panel B, which is the product of *ACAR3* and acquirer's market capitalisation on event day -2. *Experience* is the detrended number of acquisition completed before the mega-deal of our interest. *High Experience Dummy* takes the value of 1 if the mega-deals is carried by acquirers with a high level of experience, i.e. more than 12 completed acquisitions, and 0 otherwise. Models (1) and (2) include the sample of all mega-deals. Models (3) and (4) utilise the sample of successful mega-deals. Models (5) and (6) examine the sample of failed mega-deals. All models include firm and year fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *p*-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Panel A	ACAR3					
	Full Sample		Successful		Failed	
	(1)	(2)	(3)	(4)	(5)	(6)
Experience	0.0018** (0.014)		0.0019** (0.013)		-0.0001 (0.943)	
High Experience Dummy		0.0173** (0.042)		0.0211** (0.033)		0.0135 (0.519)
A_LNMV	-0.0094** (0.032)	-0.0058* (0.071)	-0.0053** (0.024)	0.0062* (0.065)	-0.0248** (0.022)	-0.0137* (0.074)
A_M2B	0.0003* (0.076)	0.0001 (0.228)	0.0003* (0.060)	0.0001 (0.525)	0.0028 (0.546)	0.0018 (0.253)
A_CF2TA	0.0937** (0.034)	0.0879** (0.030)	0.1122* (0.071)	0.1194** (0.037)	0.0746 (0.667)	0.0386 (0.807)
A_Leverage	0.0196** (0.017)	0.0172* (0.052)	0.0058** (0.049)	0.0062* (0.060)	0.0582* (0.068)	0.0951* (0.079)
RTV	0.0032 (0.655)	0.0024 (0.736)	0.0049 (0.587)	0.0037 (0.676)	0.0252 (0.123)	0.0217 (0.119)
Public	-0.0178*** (0.003)	-0.0149** (0.018)	-0.0169** (0.016)	-0.0138* (0.073)	-0.0097 (0.837)	0.0000 (1.000)
Competing Bid	-0.0073 (0.653)	-0.0057 (0.722)	-0.0092 (0.709)	-0.0077 (0.755)	-0.0365* (0.092)	-0.0275 (0.170)
Stock	-0.0041** (0.034)	-0.007* (0.052)	-0.0057** (0.036)	-0.0098* (0.086)	-0.0647** (0.033)	-0.0636*** (0.007)
Diversification	-0.0195*** (0.002)	-0.0181*** (0.004)	-0.0205*** (0.003)	-0.0201*** (0.004)	0.0102 (0.528)	0.006 (0.687)
Tender	0.0147* (0.065)	0.0144* (0.071)	0.0169* (0.075)	0.0151 (0.112)	0.0154 (0.375)	0.0174 (0.312)
Hostile	-0.007 (0.693)	-0.0075 (0.661)	0.0228 (0.574)	0.0233 (0.561)	-0.0041 (0.862)	-0.0116 (0.510)
Market Valuation	-0.001 (0.772)	0.0033 (0.591)	-0.003 (0.489)	0.0025 (0.321)	0.0008 (0.837)	0.0029 (0.778)
Run-up	0.0006 (0.935)	-0.0067 (0.457)	-0.0043 (0.667)	-0.0125 (0.322)	0.0082 (0.716)	0.0285 (0.122)
Top Advisor	0.0058 (0.399)	0.0055 (0.420)	0.006 (0.433)	0.006 (0.421)	-0.0109 (0.745)	-0.0136 (0.597)
Constant	0.0322 (0.637)	0.0386 (0.434)	2.1402 (0.176)	1.4773 (0.308)	1.1373 (0.781)	0.8675 (0.779)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	2,432	2,432	2,090	2,090	342	342

Adjusted R ²	0.046	0.013	0.04	0.018	0.029	0.013
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Panel B	\$Return					
	Full Sample		Successful		Failed	
	(1)	(2)	(3)	(4)	(5)	(6)
Experience	70.4436** (0.032)		66.2130** (0.049)		7.2913 (0.832)	
High Experience Dummy		407.4888** (0.018)		394.4302* (0.061)		227.7177 (0.771)
A_LNMV	-135.3089 (0.307)	-40.1176 (0.932)	-266.9458 (0.226)	-431.8359* (0.091)	-147.9648 (0.803)	-101.4657 (0.886)
A_M2B	21.6699 (0.644)	10.7404 (0.780)	3.7518 (0.939)	-8.2332 (0.840)	-204.1487* (0.084)	-195.1392 (0.134)
A_CF2TA	878.3411 (0.523)	1069.4154 (0.450)	1709.4976 (0.373)	1745.9748 (0.370)	1077.2761 (0.768)	754.107 (0.857)
A_Leverage	425.8312 (0.479)	287.2647 (0.601)	337.4512 (0.527)	460.0418 (0.356)	1159.6331 (0.612)	1002.964 (0.696)
RTV	-140.3616 (0.312)	-109.0339 (0.420)	22.8028 (0.899)	82.9018 (0.657)	-353.562 (0.263)	-383.5781 (0.243)
Public	-373.9953* (0.094)	-387.4860* (0.086)	-423.8477* (0.096)	-433.5501* (0.091)	818.5004 (0.351)	788.8397 (0.339)
Competing Bid	346.9427 (0.409)	366.3112 (0.378)	268.837 (0.678)	297.5973 (0.646)	-445.2156 (0.324)	-443.6062 (0.318)
Stock	-131.8723 (0.736)	-149.7471 (0.709)	-90.5398 (0.835)	-124.2258 (0.777)	-742.6887 (0.149)	-712.0016 (0.157)
Diversification	-294.7627* (0.094)	-277.6282 (0.110)	-381.4274** (0.038)	-370.0031** (0.039)	-101.0069 (0.814)	-76.3104 (0.850)
Tender	-52.3973 (0.808)	-13.4055 (0.950)	-88.7289 (0.746)	-87.7279 (0.747)	165.4793 (0.526)	149.8434 (0.580)
Hostile	87.1296 (0.865)	70.2347 (0.889)	704.2382 (0.584)	710.4905 (0.580)	106.1737 (0.829)	115.7868 (0.813)
Market Valuation	-216.3533* (0.078)	-235.9127* (0.058)	-263.6395* (0.051)	-276.8539* (0.051)	-480.77 (0.495)	-477.0276 (0.509)
Run-up	-249.8312 (0.439)	-362.9271 (0.261)	-465.3245 (0.232)	-582.4293 (0.141)	1184.0368 (0.116)	1165.2797 (0.148)
Top Advisor	263.8345 (0.305)	256.1461 (0.312)	325.7008 (0.255)	309.6305 (0.271)	-368.4283 (0.602)	-346.3539 (0.628)
Constant	996.689 (0.232)	231.7109 (0.715)	111458.0364** (0.042)	106927.0193* (0.055)	180008.5638 (0.105)	173626.347 (0.136)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
N	2,432	2,432	2,090	2,090	342	342
Adjusted R ²	0.033	0.014	0.028	0.021	0.087	0.088

Table 6 – BHAR analysis

This table reports the mean and median values of acquirer's buy and hold abnormal returns over three event windows. To eliminate biases related to long-run event study, we employ size-adjusted buy-and-hold abnormal returns (BHARs). *BHAR12*, *BHAR24* and *BHAR36* respectively represent long-run returns for the samples over 12-, 24-, and 36-month period following the announcement date. First, we present the values for the full sample. Next, we sub-divide our sample based on whether the deal is completed and the level of acquisition experience. The t-test and Wilcoxon test are used to test for statistical significance of means and medians, respectively. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Full Sample			
	BHAR12	BHAR24	BHAR36
Panel A: Successful sample			
Mean	-0.0320***	-0.0708***	-0.0659***
Median	-0.0419***	-0.0882***	-0.1311***
N	2,824	2,824	2,824
Panel B: Failed sample			
Mean	-0.0750***	-0.1023***	-0.1746***
Median	-0.0748***	-0.0963***	-0.2212***
N	443	443	443
Diff (B)-(A)			
Mean	-0.0430**	-0.0315	-0.1087***
Median	-0.0329**	-0.0081	-0.0901***
Low experience			
	BHAR12	BHAR24	BHAR36
Panel C: Successful sample			
Mean	-0.0407***	-0.0799***	-0.0802***
Median	-0.0638***	-0.1343***	-0.1954***
N	925	925	925
Panel D: Failed sample			
Mean	-0.1072***	-0.1365***	-0.2226***
Median	-0.1370***	-0.1831***	-0.3247***
N	173	173	173
Diff (D)-(C)			
Mean	-0.0664*	-0.0567	-0.1423**
Median	-0.0732**	-0.0488	-0.1293**
Moderate experience			
	BHAR12	BHAR24	BHAR36
Panel E: Successful sample			
Mean	-0.0430***	-0.0920***	-0.0984***
Median	-0.0518***	-0.1078***	-0.1668***
N	1,204	1,204	1,204
Panel F: Failed sample			
Mean	-0.0694**	-0.1176***	-0.2245***
Median	-0.0654**	-0.0897*	-0.2218***
N	178	178	178
Diff (F)-(E)			
Mean	-0.0264	-0.0256	-0.1261**
Median	-0.0136	0.0181	-0.0550**
High experience			
	BHAR12	BHAR24	BHAR36

Panel G: Successful sample			
Mean	-0.0013	-0.0219	0.0095
Median	0.0014	-0.0196	-0.0024
N	695	695	695
Panel H: Failed sample			
Mean	-0.0253	-0.0082	0.0121
Median	-0.0416	0.0058	-0.0516
N	92	92	92
Diff (H)-(G)			
Mean	-0.0240	0.0137	0.0026
Median	-0.0429	0.0254	-0.0491
The difference between low experience and high experience			
	BHAR12	BHAR24	BHAR36
Panel I: Successful sample			
Diff (G)-(C)			
Mean	0.0394**	0.0580**	0.0897**
Median	0.0652***	0.1147***	0.1930***
Panel J: Failed sample			
Diff (H)-(D)			
Mean	0.0819	0.1283*	0.2346**
Median	0.0954**	0.1888**	0.2732***

Table 7 – Panel data regression of acquirer long-run stock performance

This table reports panel data regressions of acquirer's long-run stock performance. BHAR36 is the dependent variable in all models, which is acquirer's buy-and-hold abnormal return from size- and book-to-market ratio-adjusted model in the 36-month event window following the mega-deal announcement. *Experience* is the detrended number of acquisition completed before the mega-deal of our interest. *High Experience Dummy* takes the value of 1 if the mega-deals is carried by acquirers with a high level of experience, i.e. more than 12 completed acquisitions, and 0 otherwise. Models (1) and (2) include the sample of successful mega-deals. Models (3) and (4) examine the sample of failed mega-deals. All models include firm and year fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *p*-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

BHAR36	Successful Sample		Failed Sample	
	(1)	(2)	(3)	(4)
Experience	0.0071** (0.022)		0.0095 (0.697)	
High Experience Dummy		0.2165* (0.069)		0.4557 (0.164)
A_LNMV	-0.2281*** (0.000)	-0.6053*** (0.000)	-0.4008** (0.021)	-0.4709*** (0.003)
A_M2B	-0.0008* (0.060)	-0.0015 (0.122)	0.0189 (0.201)	0.0228 (0.106)
A_CF2TA	0.7055*** (0.002)	2.7498** (0.018)	-0.8187 (0.463)	-1.1206 (0.304)
A_Leverage	0.0449 (0.674)	0.0061 (0.978)	-0.3388 (0.715)	-0.576 (0.530)
RTV	-0.0245 (0.497)	-0.155 (0.183)	-0.1096 (0.484)	-0.1107 (0.431)
Public	-0.0281 (0.296)	-0.0819 (0.128)	0.2087 (0.530)	0.1466 (0.644)
Competing Bid	0.0607 (0.365)	0.1584 (0.171)	-0.3912* (0.067)	-0.4056** (0.041)
Stock	-0.0986** (0.031)	-0.0199* (0.079)	-0.3956 (0.137)	-0.3445 (0.130)
Diversification	-0.0316 (0.244)	-0.1155* (0.077)	-0.0691 (0.724)	-0.0794 (0.676)
Tender	-0.0795** (0.012)	-0.1189** (0.027)	0.3513 (0.213)	0.3157 (0.267)
Hostile	0.0107 (0.906)	0.0639 (0.719)	-0.4605*** (0.008)	-0.3796** (0.025)
Market Valuation	-0.0093* (0.069)	-0.0219** (0.041)	0.0221 (0.823)	0.0362 (0.703)
Top Advisor	0.0014 (0.956)	-0.0743 (0.254)	0.4854 (0.122)	0.4234 (0.175)
Constant	-34.6609*** (0.000)	-88.2520*** (0.000)	-77.1163* (0.068)	-87.2871** (0.026)
Year fixed effect	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
N	2032	2032	313	313
Adjusted R ²	0.135	0.172	0.224	0.258

Table 8 – Operating performance analysis

This table reports acquirer's median industry-adjusted return on assets (*ROA*) from -3 to +3 years relative to the mega-deal announcement. *ROA* is calculated as the ratio of net income to total assets. Industry-adjusted *ROA* is calculated by subtracting the median *ROA* of the corresponding industry from the firm *ROA*. The sample is divided based on the level of acquisition experience and whether the deal is completed. The Wilcoxon test is used to test for statistical significance. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Industry-adjusted ROA		Firm experience		
Year relative to merger		Low (1)	Moderate (2)	High (3)
Panel A: Successful Sample				
-3	Median	2.22%	4.14%	7.69%
	N	680	919	589
-2	Median	2.73%	4.23%	7.86%
	N	680	921	589
-1	Median	3.35%	4.87%	8.05%
	N	679	920	589
1	Median	2.67%	3.84%	7.82%
	N	660	908	586
2	Median	2.55%	4.06%	7.79%
	N	664	835	586
3	Median	2.79%	3.54%	7.49%
	N	664	756	586
Pre-merger 3 years median		2.97%	4.63%	7.68%
Post-merger 3 years median		2.81%	4.02%	7.58%
Difference [-3, +3]		-0.15% **	-0.62% **	-0.10%
Panel B: Failed Sample				
-3	Median	2.29%	3.99%	4.43%
	N	142	132	77
-2	Median	3.43%	3.80%	3.92%
	N	142	133	77
-1	Median	2.89%	3.75%	4.41%
	N	142	133	77
1	Median	3.04%	3.81%	4.75%
	N	130	127	76
2	Median	2.92%	3.00%	5.36%
	N	131	119	76
3	Median	2.34%	3.00%	5.17%
	N	131	110	76
Pre-merger 3 years median		3.44%	3.81%	4.41%
Post-merger 3 years median		2.81%	2.87%	5.58%
Difference [-3, +3]		-0.63%	-0.94%	1.17% *

Table 9 – Panel data regression of acquirer long-run operating performance

This table reports panel data regressions of acquirer's long-run operating performance. The changes in industry-adjusted *ROA* is the dependent variable in all models, which is the difference between the pre-merger and post-merger 3-year median industry-adjusted *ROA*. *Experience* is the detrended number of acquisition completed before the mega-deal of our interest. *High Experience Dummy* takes the value of 1 if the mega-deals is carried by acquirers with a high level of experience, i.e. more than 12 completed acquisitions, and 0 otherwise. Models (1) and (2) include the sample of successful mega-deals. Models (3) and (4) examine the sample of failed mega-deals. All models include firm and year fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *p*-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

ΔROA	Successful Sample		Failed Sample	
	(1)	(2)	(3)	(4)
Experience	0.0015** (0.019)		-0.0039 (0.342)	
High Experience Dummy		0.0276* (0.073)		-0.0389 (0.200)
A_LNMV	-0.0084* (0.071)	-0.0081* (0.095)	-0.0219 (0.205)	-0.0141 (0.366)
A_M2B	0.0002 (0.884)	-0.0001 (0.957)	-0.0001 (0.988)	0.0001 (0.976)
A_CF2TA	-0.2231** (0.018)	-0.2105** (0.025)	0.1187 (0.249)	0.1252 (0.249)
A_Leverage	0.0319 (0.137)	0.0343 (0.104)	0.0617 (0.475)	0.0851 (0.367)
RTV	-0.0162*** (0.008)	-0.0167*** (0.007)	-0.0044 (0.844)	-0.0034 (0.838)
Public	-0.0007 (0.913)	-0.0009 (0.891)	0.0097 (0.776)	0.0277 (0.333)
Competing Bid	0.0024 (0.776)	0.0039 (0.633)	0.0319 (0.212)	0.0196 (0.202)
Stock	-0.0200** (0.037)	-0.0194* (0.064)	0.0359 (0.195)	0.0151 (0.449)
Diversification	-0.0104* (0.075)	-0.0107* (0.066)	0.0148 (0.577)	0.0042 (0.848)
Tender	-0.0136* (0.053)	-0.0130* (0.062)	-0.0496** (0.035)	-0.0365* (0.050)
Hostile	-0.0099 (0.525)	-0.0108 (0.489)	-0.0182 (0.525)	-0.032 (0.211)
Top Advisor	-0.0041 (0.422)	-0.0036 (0.480)	0.0079 (0.882)	0.0328 (0.442)
Constant	0.2731 (0.783)	0.0241 (0.980)	-5.1663 (0.477)	-1.195 (0.814)
Year fixed effect	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
N	1909	1909	307	307
Adjusted R ²	0.076	0.079	0.081	0.064

Table 10 – IV regression of short-run stock performance

This table reports 2SLS regression of acquirer's short-run stock performance. Models (1) and (2) test the relationship between *Experience* and *ACAR3*. Models (3) and (4) test the relationship between *High Experience Dummy* and *ACAR3*. The instrumental variables are *Urban* and *Age*. *Urban* is a dummy variable that equals 1 if the acquiring firm is headquartered in the 10 largest metropolitan statistical areas on the U.S. government list, and 0 otherwise. *Age* is measured by the duration between the earliest year of the acquirer listed in Compustat and the year of the acquirers announcing mega-deals. All models include firm and year fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report p-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

Full Sample	First-stage regression Experience (1)	Second-stage regression ACAR3 (2)	First-stage regression High Experience Dummy (3)	Second-stage regression ACAR3 (4)
Predicted Experience		0.0014** (0.037)		
Predicted High Experience Dummy				0.0167** (0.032)
Instrumental variables:				
Urban	0.9527*** (0.007)		0.0187* (0.071)	
Age	0.0545*** (0.000)		0.0016*** (0.002)	
A_LNMV	2.5522*** (0.000)	-0.0028 (0.651)	0.1098*** (0.000)	-0.0024 (0.745)
A_M2B	-0.0105** (0.036)	0 (0.446)	-0.0004 (0.112)	-0.0001 (0.440)
A_CF2TA	1.561 (0.424)	0.0341** (0.016)	-0.0247 (0.812)	0.0836** (0.021)
A_Leverage	-0.3904 (0.499)	0.0031 (0.906)	-0.0232 (0.447)	0.0045 (0.561)
RTV	1.6541*** (0.000)	0.0024 (0.625)	0.0803*** (0.000)	0.0017 (0.820)
Public	-0.3236 (0.317)	-0.0201*** (0.000)	0.0082 (0.632)	-0.0238*** (0.000)
Competing Bid	-0.1579 (0.792)	-0.0055 (0.569)	-0.0202 (0.526)	-0.0032 (0.683)
Stock	1.0741** (0.012)	-0.0266*** (0.001)	0.0324 (0.153)	-0.0360*** (0.000)
Diversification	1.5194*** (0.000)	-0.0154*** (0.001)	0.0359** (0.030)	-0.0155*** (0.001)
Tender	0.4067 (0.311)	0.0061 (0.279)	0.0081 (0.703)	0.0051 (0.115)
Hostile	0.2182 (0.739)	0.0033 (0.545)	0.017 (0.625)	-0.0027 (0.751)
Market Valuation	-0.1131 (0.571)	-0.0044 (0.137)	-0.0062 (0.553)	-0.0062** (0.016)
Run-up	-1.0981*** (0.001)	-0.0021 (0.628)	-0.0293 (0.109)	-0.0069 (0.131)

Top Advisor	-0.3974 (0.230)	-0.0026 (0.612)	-0.0168 (0.339)	-0.0002 (0.965)
Constant	-134.7451*** (0.000)	-0.0978 (0.885)	-4.4890** (0.014)	-0.5063 (0.411)
Year fixed effect	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
N	2028	2028	2028	2028
Adjusted R ²	0.145	0.059	0.193	0.067
<i>p</i> -value for Wu-Hausman's test	0.0135		0.0308	
Cragg-Donald Wald <i>F</i> -statistic	20.72		14.35	
<i>p</i> -value for Sargan's test	0.3638		0.7077	

Table 11 – Threshold regression of short-run stock performance

This table reports threshold model of acquirer's short-term performance. *ACAR3* is the dependent variable in models of Panel A, which is acquirer's cumulative abnormal return over 3-day event window surrounding the announcement date. *Experience* is the detrended number of acquisition completed before the mega-deal of our interest. Two regimes are defined by threshold model: inexperienced acquirer (*Experience*≤4) and experienced acquirer (*Experience*>4), of which the results are presented in Model (1) and (2), respectively. All models include industry and year fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *t*-statistics in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

ACAR3	Regime1: Experience≤4	Regime 2: Experience>4
	(1)	(2)
Experience	0.0028 (0.258)	0.0027*** (0.005)
A_LNMV	-0.0049 (0.355)	0.0119 (0.253)
A_M2B	0.0013** (0.018)	0.0014 (0.184)
A_CF2TA	-0.1288 (0.142)	-0.0837 (0.233)
A_Leverage	-0.0156 (0.541)	0.0035 (0.902)
RTV	0.0094 (0.367)	-0.0149 (0.143)
Public	-0.0063 (0.488)	-0.0211** (0.017)
Competing Bid	0.0166 (0.330)	0.0024 (0.911)
STOCK	-0.0299** (0.036)	-0.0052 (0.681)
Diversification	-0.0349*** (0.000)	-0.0152* (0.076)
Tender	0.0077 (0.385)	0.0153 (0.243)
Hostile	-0.0626*** (0.000)	0.0052 (0.846)
Market Valuation	-0.0053 (0.338)	-0.0038 (0.398)
Run-up	0.0192 (0.195)	-0.013 (0.266)
Top Advisor	-0.0056 (0.601)	0.0038 (0.688)
Constant	-0.0713** (0.026)	4.0528** (0.024)
Year fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
N	1074	1358
R ²	0.126	0.035

Table 12 – Analyses on completion and short-run stock performance by different time periods

This table reports linear probability model of mega-deal completion and panel data regressions of acquirer's short-term performance over time periods of 1980-2009 and 2010-2016. All models include year and firm fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *p*-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

	Completion		ACAR3	
	1980-2009	2010-2016	1980-2009	2010-2016
	(1)	(2)	(3)	(4)
Experience	0.0019** (0.045)	0.0062*** (0.003)	0.0017** (0.030)	0.0029* (0.065)
A_LNMV	0.0055 (0.423)	-0.0275** (0.025)	-0.0024 (0.624)	-0.0035 (0.856)
A_M2B	-0.0008 (0.296)	0 (0.802)	0.0025** (0.046)	0.001 (0.353)
A_CF2TA	0.2132* (0.055)	-0.1307 (0.565)	-0.1173* (0.086)	-0.072 (0.527)
A_Leverage	-0.0463 (0.157)	-0.0136 (0.774)	-0.0087 (0.637)	0.0096 (0.860)
RTV	-0.0396** (0.031)	0.0034 (0.911)	0.0001 (0.990)	0.0089 (0.654)
Public	-0.1052*** (0.000)	-0.1710*** (0.000)	-0.0223*** (0.003)	-0.0134 (0.406)
Competing Bid	-0.2181*** (0.000)	-0.2375** (0.020)	0.0093 (0.609)	0.0245 (0.375)
STOCK	0.0056 (0.792)	0.0299 (0.607)	-0.0058 (0.572)	-0.0087 (0.698)
Diversification	-0.0133 (0.433)	0.0392 (0.110)	-0.0185*** (0.008)	-0.0334** (0.015)
Tender	0.1189*** (0.000)	0.2440*** (0.000)	0.0012 (0.875)	0.0139 (0.483)
Hostile	-0.4294*** (0.000)	-0.7121*** (0.000)	-0.0031 (0.891)	-0.0402* (0.081)
Top Advisor	0.0629*** (0.000)	0.0748*** (0.001)	0.0076 (0.401)	0.0041 (0.786)
Market Valuation			0.003 (0.541)	-0.0169** (0.016)
Run-up			-0.0045 (0.628)	-0.0315** (0.045)
Constant	0.0059 (0.879)	18.0679 (0.184)	0.0077 (0.867)	-1.4807 (0.915)
Year fixed effect	Yes	Yes	Yes	Yes
Firm fixed effect	Yes	Yes	Yes	Yes
N	1738	760	1708	724
Adjusted R ²	0.212	0.241	0.025	0.072

Table 13 – Robustness check for the definition on acquisition experience

This table reports panel data regressions of the time elapsed between successive deals. *TBD* is the dependent variable, which is the number of days between the most recent completed deal and the announcement date of the current mega-deal. *Short TBD* is a TBD below the sample median. *Long TBD* is a TBD above the sample median. *DON* is the key variable of interest, which is the mega-deal's sequence for a given acquirer. The model includes year and firm fixed effects. Detailed variable definitions are shown in the Appendix. All continuous variables are winsorized at the 1% and 99% levels. We report *p*-value in parentheses. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

TBD	Short TBD	Long TBD
	(1)	(2)
DON	-1.7675** (0.039)	12.6924** (0.047)
Top Advisor	-5.675 (0.620)	-13.5741 (0.812)
CEO Expeirence	-1.3423 (0.073)	-8.349 (0.311)
Serial Acquirers	-0.6751 (0.461)	-47.1301*** (0.000)
A_LNMV	-9.4239 (0.137)	-16.6331 (0.466)
Constant	7.5102 (0.672)	-179.6078** (0.025)
Year fixed effect	Yes	Yes
Firm fixed effect	Yes	Yes
N	899	1024
Adjusted R ²	0.026	0.056

Table 14 – Robustness check for acquirer's long-run stock performance

This table reports calendar time abnormal returns over three event windows. The table presents the equal-weight and value-weight analysis results. *CTAR12*, *CTAR24* and *CTAR36* respectively represent long-run returns for the samples over 12-, 24-, and 36-month period following the announcement date. First, we present the values for the full sample. Next, we sub-divide our sample based on the level of acquisition experience. Significance at the 1%, 5% and 10% levels is denoted by ***, ** and * respectively.

		Firm Experience		
	Full Sample	Low (1)	Moderate (2)	High (3)
CTAR12				
Equal-Weight	-1.52% *** (0.000)	-1.65% *** (0.008)	-2.09% *** (0.000)	-0.41% (0.496)
Value-Weight	-1.44% *** (0.000)	-1.63% *** (0.003)	-2% *** (0.000)	-0.25% (0.458)
CTAR24				
Equal-Weight	-1.31% *** (0.002)	-2.31% *** (0.000)	-1.29% * (0.085)	-0.3% (0.362)
Value-Weight	-1.06% *** (0.000)	-2.28% *** (0.000)	-0.89% * (0.092)	-0.04% (0.305)
CTAR36				
Equal-Weight	-0.82% ** (0.043)	-1.15% ** (0.024)	-0.92% ** (0.023)	-0.20% (0.451)
Value-Weight	-0.56% ** (0.043)	-1.12% ** (0.011)	-0.49% * (0.076)	-0.01% (0.481)